



Helping Kentucky's Impacted Communities: UK-SBRP's Community Outreach Core

Superfund Community Action through Nutrition (SCAN)

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UK's SBRP's Focus

How nutrition affects the
consequences of exposure to
Superfund pollutants



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UK SBRP Research



- Certain coplanar PCBs contribute to oxidative damage/stress in the body
- Exposure to PCBs contribute to an increased risk for chronic diseases:
 - **Cardiovascular disease**
 - **Cancer**
- Intake of certain fats with PCBs increase oxidative stress
- Especially in combination with poor diet
- Intake of anti-oxidants protects against oxidative stress

Purpose of SCAN

- To meet the needs of individuals and communities affected by environmental contaminants
- To bring science to the people most affected by environmental contaminants
- To improve health and benefit the lives of these people



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SCAN has 3 critical tasks

- Identify groups and individuals affected by pollutants
- Interact and build mutual trust
- Offer meaningful programs that can be shown to be helpful





3 Audiences

- Affected Superfund community groups and individuals
 - *Examples: Dayhoit, KY community impacted by TCE and PCB-laden oils dumped into the Cumberland River; Paducah, KY community near an EPA-designated Superfund National Priority List site*
- Broad public audiences
- Health care professionals





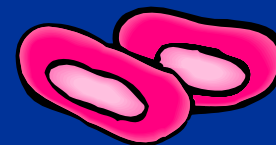
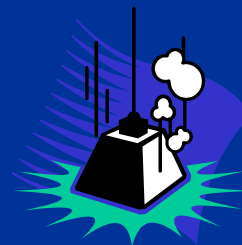
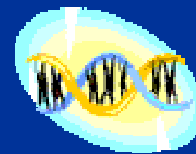
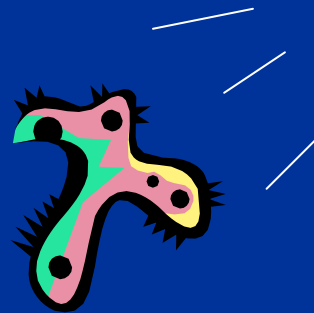
Sample SCAN Programs

- “Antioxidants – what are they?”
- Increase intake of fruits and vegetables – fruit smoothies
- “Spice Up your Immune System” – spices are antioxidants
- Portion sizes



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HERBS and SPICES

- Used for:
 - Taste
 - Food preservation
 - Food sanitation
 - Variety
 - Gifts



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What do herbs and spices have to do with my health or immune system?





Antioxidants

- Prevents bad things from forming inside of our bodies
 - Prevents oxidation
 - Prevents/reverses free-radical formation





OXIDATION

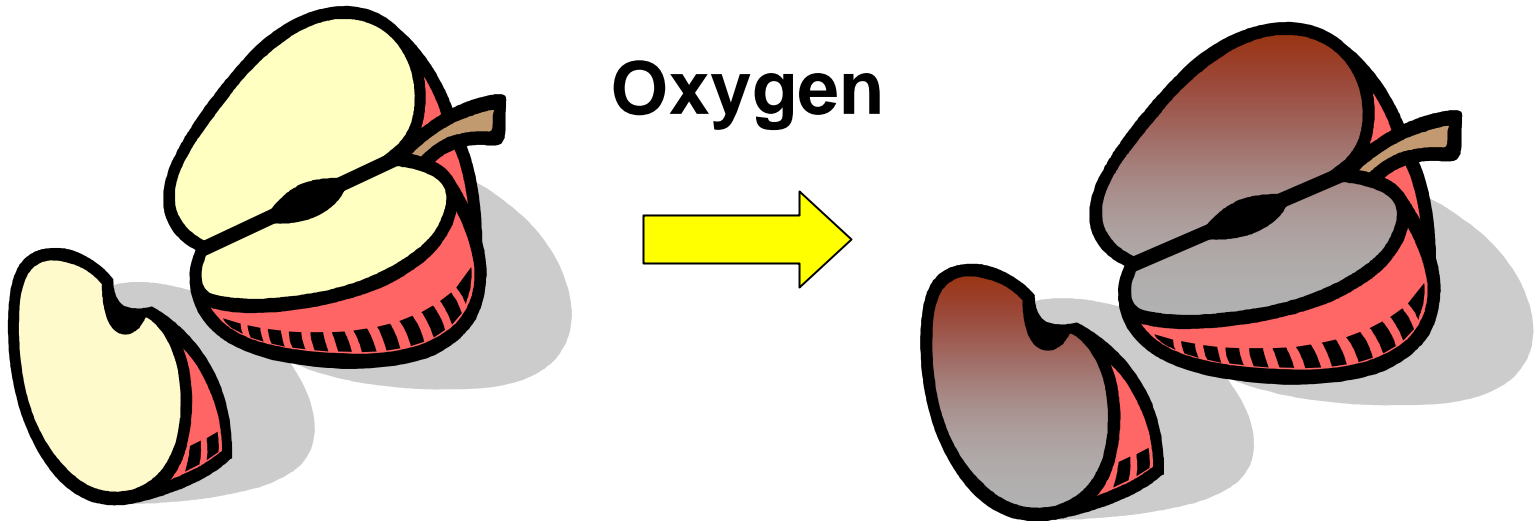
The process of combining or binding with oxygen



Example of Oxidation



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**The process of oxygen binding
within the body**

**Too much oxygen or the wrong
combination with oxygen can
lead to oxidative stress**



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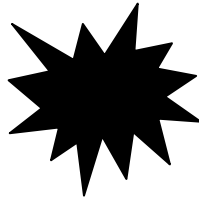
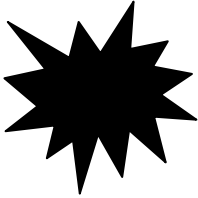


FREE RADICAL



Chemistry: An unstable, highly reactive compound (OXIDANT)

**Substances that cause damage
or oxidative stress within the
body**



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Example of Free Radical Formation

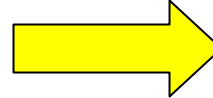


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Cooking Oil

**Oxygen,
Light, or
Heat**



**Rancid
Cooking
Oil**



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- **Cinnamon**
- **Cumin**
- **Black Pepper**
- **Turmeric**
- **Cloves**
- **Ginger**



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Health Benefits of Cinnamon



- Antioxidant benefits:
 - Heart: decreases inflammation
 - Diabetes: improves ability to respond to insulin
- Food Preservation and Safety
 - Good preservative
 - Decreased growth of food-borne pathogens



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Health Benefits of Turmeric



(aka "Indian Saffron")



- Anti-inflammatory effects
 - Potential help for inflammatory bowel disease
 - Potential relief for rheumatoid arthritis
- Potential benefit for cystic fibrosis patients
- Antioxidant Benefits:
 - May reduce colon cancer and help the body destroy cancer cells
 - May reduce the risk of developing childhood leukemia
- May improve liver function
- May decrease risk for diseases of the heart
- May provide protection against Alzheimer's Disease
- Excellent source of manganese and iron
- Good source of vitamin B6, fiber, and potassium



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Herbs

- Thyme
- Oregano
- Basil
- Parsley



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Health Benefits of Oregano

- High Antioxidant Activity
 - 42x's that of apples
 - 30x's that of potatoes
 - 12x's that of oranges
 - 4x's that of blueberries
- Nutrient Dense
 - Very good source of fiber, iron, and manganese
 - Good source of calcium, vitamin C, vitamin A, and omega 3-fatty acids
- Anti-bacterial properties
 - Research: In Mexico, more effective than prescription drugs against Giardia





Community Outreach Translation Seeks to:

- Inform people that exposure to PCBs increases the risk of heart disease and other chronic diseases
- Decrease intake of total fat
- Increase intake of food high in anti-oxidants to protect against this, increase intake of fruits, vegetables, and spices
- Increase intake of fiber



Conclusion

- SCAN in full partnership with affected communities:
 - empowers individuals and communities to take proactive steps with regard to health
 - develops new diet strategies to optimize health in the face of exposure to Superfund contaminants



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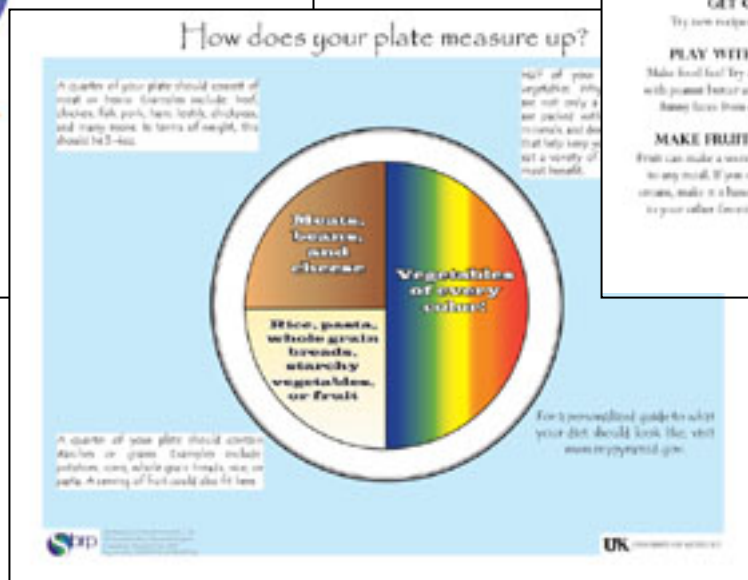
Scientific research is very important, but the true value of scientific research is measured by the degree to which it benefits the lives of people and the communities in which they live



For more information and print materials, visit:
www.uky.edu/Research/Superfund/SCANprog.htm



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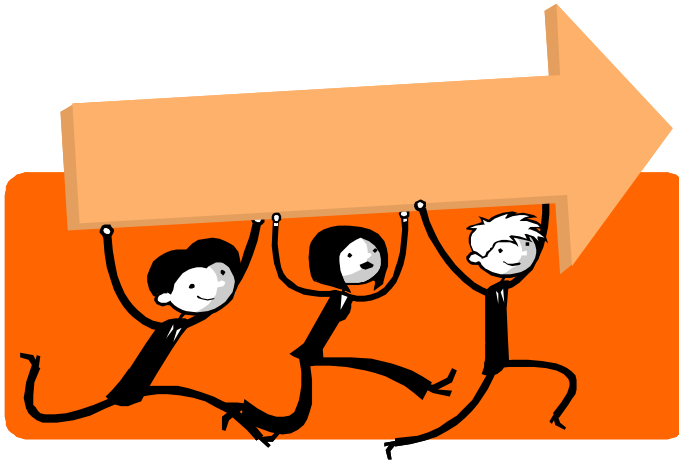
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How can you get involved?



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